

Application No.: 10/528,690
Amendment under 37 CFR 1.111
Reply to Office Action dated June 25, 2008
September 25, 2008

REMARKS

By this amendment, claim 1 has been amended and claims 2-26 have been cancelled in the application. Currently, claim 1 is pending in the application.

The title of the invention was objected to because it was not descriptive. By this amendment, the title has been amended to "A DEVICE FOR BONDING A METAL ON A SURFACE OF A SUBSTRATE" as the Examiner suggested. Applicants respectfully submit that in view of this amendment, this objection should be withdrawn.

Claim 9 was rejected under 35 USC 112, second paragraph, as being indefinite. The Examiner stated that in claim 9, the phrase "Vicker hardness Hv" is considered to be Trademark and rendered the claim indefinite because it was unclear and confusing how this limitation affected the metal bonding portion. This rejection is respectfully traversed. The Vicker hardness Hv is a well known hardness property measurement and is not a registered trademark. For this reason, the subject matter originally in claim 9, now in claim 1, has not been amended. If the Examiner still believes that this matter relates to use of a trademark in a claim, the Examiner is respectfully requested to cite the relevant trademark.

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Claim 1 was rejected under 35 USC 102(b) as being obvious over Nihei et al. (U.S. Patent No. 5,767,577). Claims 2, 8 and 11-12 were rejected under 35 USC 103(a) as being obvious over Nihei et al. in view of Hogerton et al. (U.S. Patent No. 5,714,252). Claim 3 was rejected under 35 USC 103(a) as being obvious over Nihei et al. in view of Fjelstad et al. (U.S. Patent No. 5,802,699). Claim 4 was rejected under 35 USC 103(a) as being obvious over Nihei et al. in view of Tuckerman (U.S. Patent No. 4,992,847). Claims 5-7 and 9-10 were rejected under 35 USC 103(a) as being obvious over Nihei et al. in view of Fuchs et al. (U.S. Patent No. 5,919,561).

By this amendment, claims 2-26 have been cancelled and the features of original claims 1-12 have been combined together into amended claim 1. Applicants respectfully submit that these rejections should be withdrawn in view of these amendments and the remarks below.

In the present invention, a device for bonding objects to be bonded each having a metal bonding portion on a surface of a substrate is described. The surfaces of the metal bonding portions are activated by short-time plasma irradiation and then the surface to be bonded is bonded by activation of the surface. Claim 1 has been amended to recite the specific features related

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to this type of bonding mechanism. These features are not shown or suggested in the prior art of record.

The primary reference used by the Examiner, is Nihei et al. Nihei relates to solder bonding and not bonding by surface activation as claimed in this application. Nihei et al. is in a field essentially different from room temperature bonding in an atmosphere according to the present invention. Therefore, Nihei et al. does not anticipate or render obvious the present invention.

Likewise, the other cited references do not show or suggest the claimed features. Hogerton et al. disclose a device for disposing a curing type adhesive 30 and pressing an integrated circuit 10 relative to the substrate 20.

Fjetstad et al. relate to a connector engaged with bump leads.

Tuckermann disclose to a structure of a hybrid IC.

Fuchs discloses a reflector.

None of these references show or suggest the features in claim 1 as amended and any combination of these references would not render claim 1 obvious.

Therefore, in view of foregoing amendments and remarks, it is respectfully submitted that the claims are allowable over the

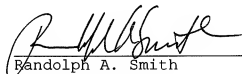
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prior art of record. Thus, applicants respectfully submit that the application is now in condition for allowance and an action to this effect is respectfully requested.

If there are any questions or concerns regarding this amendment or the remarks, the Examiner is requested to telephone the undersigned at the telephone number listed below.

Respectfully submitted,

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